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ABSTRACT

Baseline data were obtained pertaining to needs assessment criteria and standards of performance as perceived by local secondary vocational administrators in Tennessee. All local secondary vocational administrators listed in the 1990-91 state directory were the eligible population. The survey consisted of 32 items with a Likert response scale. Sixteen items pertained to the school and 16 to the vocational teachers. Descriptive statistics and analysis of variance were used to describe the responses and report comparisons. Items' mean rankings from lowest to highest were reported for all respondents to provide an overall statewide ranking of items and by certification as a local vocational administrator on all items. Respondents as a group identified four of the lowest five mean rated items as pertaining to employers or business and industry involvement and perceived their teachers as having the five lowest mean ratings on items pertaining to basic skills, articulation agreements, employer review of program instructional material, integration of basic skills, and employers reviewing programs to identify needs. When respondents were compared on the basis of certification, 10 significant differences were found with the lower mean ratings coming from the respondents without certification on 9 items. Overall, the mean scores for respondents with certification were higher on 26 items. The study identified barriers preventing students from participating in vocational education that were serious and needed to be addressed. (Appendixes include 11 references and the survey.) (YLB)

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A STATEWIDE NEEDS ASSESSMENT IN TENNESSEE: VOCATIONAL ADMINISTRATORS

by

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A STATEWIDE NEEDS ASSESSMENT IN TENNESSEE:

VOCATIONAL ADMINISTRATORS

A research study identifying needs based on the Carl D. Perkins Vocational and Applied Technology Act of 1990 as perceived by vocational administrators.

Principal Investigators:

Don E. McNelly
Constance D. Thomas
Edward C. Mann
Gregory C. Petty

Contents of this publication do not necessarily reflect views of policy, position, or opinion of the Tennessee Department of Education or the University of Tennessee, Department of Technological and Adult Education.

Preface

In response to the Carl D. Perkins Vocational and Applied Technology Act of 1990, four statewide needs assessment surveys were conducted. Several individuals have made contributions to initiating the surveys. Special recognition is hereby extended to the Tennessee Department of Vocational-Technical Education staff. In particular, Mr. Marvin Flatt, Assistant Commissioner, Tennessee State Department of Education, Mr. Russell Smith, Administrative Assistant and Director of Field Services, and Mr. Jim Vinson, Director of Program Planning and Development are recognized. Special recognition is also extended to Dr. Gerald Cheek, Professor and Department Head for the Department of Technological and Adult Education, University of Tennessee--Knoxville, for technical advice and departmental support which includes graduate assistants to help conduct various activities. The statewide surveys and reports would not have been possible without their support and assistance. Many local vocational administrators, teachers, and employers assisted by providing primary information and data.

The new legislation specifically requires local and statewide needs assessments to aid in vocational program planning for improvement and accountability. The four studies were conducted statewide to provide initial status with respect to the eleven federal needs assessment criteria areas and as a framework for measuring on an objective basis progress over a given period of time. Further, each study provides the perceptions of the respondents, namely, vocational administrators, vocational teachers, special needs teachers, and employers. Each study was designed to secure responses from the respondents in selected areas. By combining the four reports, measures are available for all eleven federal needs assessment criteria areas.

The research was conducted through the State Secondary Vocational Program Evaluation Project with each researcher taking a lead role with one of the studies. The scope of this study was confined to perceptions from one respondent source. No graduate student used the data for a dissertation or thesis.

Secondary Vocational-Technical Education is serving many secondary students. This research report should provide information to policy makers and planners to assist them in their efforts to continue to provide quality relevant vocational-technical education for all secondary students in Tennessee.

Don E. McNelly
Director
State Secondary Vocational
Program Evaluation Project
and Principal Investigator

Abstract

The purpose of this study was to secure quantifiable baseline information pertaining to the federal needs assessment criteria and standards of performance as perceived by local secondary vocational administrators. The local vocational administrators' responses were analyzed for statistical comparisons based on certification as a local vocational administrator.

All local secondary vocational administrators listed in the 1990-91 state directory were the eligible population for this study. Descriptive statistics and analysis of variance were used to describe the responses and report comparisons. Items mean ratings were reported for all respondents to provide an overall state-wide ranking of items from the lowest to the highest rating. Items mean ratings were also reported by certification as a local vocational administrator on all items from the lowest to the highest mean rating.

The vocational administrators as a total group for their system had four of the lowest five mean rated items to pertain to employers or business and industry involvement. The fifth lowest rated item pertained to the local school system placing an equal emphasis on preparing individuals for employment or further study. Also, on a total group basis, the vocational administrators perceived their teachers with the five lowest mean ratings on items pertaining to basic skills, articulation agreements, employer review of program instructional material, integration of basic skills and employers reviewing programs to identify needs for areas of emerging technologies.

Ratings by the vocational administrators were compared on the basis of certification as a local vocational administrator. Ten significant differences were found with the lower mean ratings coming from the respondents without certification as a vocational administrator on nine items. The nine items were as follows: documenting the increased study work skill attainment, employers reviewing instructional equipment, employers reviewing instructional materials, employers identifying program needs for emerging technologies, employers determining program relevancy for current and future labor market needs, teaching higher order competencies, formal follow-up reports for each program, implementing changes for improvement and increased graduation requirements having a negative effect on vocational participation. The respondents without vocational certification had a higher mean rating on the item pertaining to an equal emphasis from the system on preparing an individual for employment and further study.

Overall, the mean scores for the respondents with certification as a vocational administrator were higher on twenty-six of the thirty-one items. The items with higher mean ratings for the respondents without vocational administrative certification were on items pertaining to their school in general.

Increased graduation and college entrance requirements, scheduling limitations, student counseling and guidance, and inadequate funding were the most frequently listed non-physical barriers for students participating in secondary vocational education. Actions to address these barriers have been taken but the barriers remain. A six period school day plus the emphasis on preparing for college by many schools are the two greatest non-physical barriers for secondary students participating in vocational education.

This study does provide indicators of existing perceptions of how local vocational education administrators and systems are currently meeting the federal needs assessment criteria and performance standards areas. Individual systems needs will vary from the state-wide findings. The state-wide findings do provide a profile of the areas of greatest needs as perceived by the local vocational administrative respondents. Progress over a period of time can be measured with respect to the items included on this study.

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Introduction

The passage of the Carl D. Perkins Vocational and Applied Technology Act of 1990 provides secondary education with federal assistance for an additional five years--July 1, 1991-June 30, 1996. The focus in the new legislation is on accountability, flexibility, ties to economic development, program improvement, integration of academics into vocational education and articulation. The impact has been dramatic and immediate at the state and local level. It is obvious to all of those involved we can not continue to do business as usual.

Each state has been charged with the task of assessing the quality of vocational education programs using measurable objective criteria. Tennessee has elected to conduct state-wide assessments as well as require local educational systems to conduct their own needs assessments. One of the most pressing problems which complicates the issue has been very tight time lines for meeting some of the requirements. In order to facilitate initial local assessments, four state-wide survey instruments and survey forms from other states were shared with local vocational education administrators. The instruments were examples of comprehensive coverage of the areas contained in the new legislation. Local vocational education administrators were invited to adopt and/or modify any other instruments for designing local instruments for securing objective baseline objective information.

State-wide survey instruments were developed to secure information from vocational administrators, teachers, special needs teachers, and employers. All surveys had sufficient returns for inference to the total state. This report is limited to the state-wide vocational administrators survey.

Statement of the Problem

The literature search was of marginal value for designing the survey instrument. The researchers relied on their own extensive background in designing and conducting research in order to complete this study in a timely manner. Federal, state, and local officials had little research information for responding to the requirements in the new legislation. More specifically, educational officials in Tennessee did not have sufficient local or state-wide data and information to establish bench marks to establish the current status with respect to the new legislation.

Purpose of the Study

The purpose of the study was to attain baseline information which could be quantified pertaining to needs assessment criteria and standards of performance. The local vocational administrators survey was used to obtain the responses of Tennessee local vocational administrators. By following this procedure, the state would have objective comprehensive data for providing summative state-wide information.

Limitations

The study is an initial exploration of the status of local secondary vocational education programs as perceived by the local secondary vocational administrators. Qualitative information is included in this report but restricted to specific issues. Survey research does provide an economical and professional means for securing information. The information provided by the respondents is self-

reported and the accuracy of the data included in the analysis has been accepted at face value.

The response rate for the secondary vocational administrators was sufficient to make inferences to the total state. Therefore, non-respondents were not pursued after the required number was deemed appropriate.

Some of the respondents did not respond to all items or questions. The total number may vary from item to item. Because the total usable responses were more than adequate, the omissions by some respondents did not significantly effect the analysis.

The state-wide data is not intended to be used by local educational systems as their needs assessment. The information should be used as indicators of the extent local systems are meeting needs as contained in the respective items. State officials may, however, use this information as an aide to guide decisions pertaining to state-wide or regional meeting addenda topics. The lowest rated items could be used as a profile for reviewing local plans based on their respective needs assessments.

Review of Related Literature

Vocational education is in the middle of dramatic and immediate focus for change due primarily to the new federal legislation. The new legislation requires accountability, flexibility, and objective measurements over time for program improvements. Each state and local school system is presently assessing vocational programs to establish current measurements in order to objectively report improvements over time.

This review of literature is selective. Included in this review are studies, articles, and papers from a variety of sources.

One of the most comprehensive publications was the Forgotten Half: Non-College Youth in America (1988). In the summary of their report they state:

> Part of the solution lies with our schools, but only part. Too often, any discussion of the problems of youth leads quickly to a bashing of the schools for failing to do their job. Most such attacks are unfair and unwarranted. Students may work hard through the twelve grades of school, may compile adequate records, and may graduate in good standing, and their teachers may have effectively taught them the basic skills. Nevertheless, they are still likely to encounter problems in getting started in a productive career. The primary problem lies with the economy, and the path for youth to enter it, rather than with the youth themselves. Education can certainly help, but is no cure-all for massive changes in the labor market. (p. 3)

Wirt (1989) was also global in his comments but helped to focus on why, as a nation, we needed educational reform. In his presentation he stated:

> Rapidly we are learning that the crucial factor determining the health of our economy is not the skills of elites but of the workforce as a whole: their ability to learn on the job, their technical knowledge, their ability to solve problems, and their capacity for taking responsibility. The economic challenge facing the country is to improve the quality of education to the point where American workforce as a whole can out-think and out-do workers in the countries with whom we are competing.

Firms of all sizes will be effected by a shortage of skilled entry-level workers following the recession. In a U.S. News and World Report article (1991), the following observations and predictions were offered:

The 1980s boomed in large part because small businesses bustled. Firms with fewer than 100 workers accounted for two-thirds of all new employment while corporate giants were forced to trim payrolls. Though

big business leaders had been making speeches and holding forums on the eminent skills labor crunch, small companies were expected to bear the brunt of this shortage. The report stated that firms with fewer than 500 employees traditionally hire two-thirds of new entry-level workers. However, the report anticipated that when the recession had faded and there were more slots to fill than bodies to fill them, the scarce new workers would opt for better benefits and bigger salaries at larger companies, leaving small businesses shorthanded.

Murnane (1988) stated:

> Economic considerations--the productivity growth slowdown and America's struggle to remain competitive in the global economy--have provided the main impetus for reform. And while it is erroneous to pin the blame for America's economic difficulties entirely on the educational system, many people believe that basic features of the school system--who is taught which subjects? when? how?--need to be redesigned to fit the realities of the post-industrial world.

We must not get caught up in responding only to the most visible and perhaps politically active larger firms. Prodgusky (1987) concluded, "It is important to note that while the rate of growth in jobs that require more advanced skills is quite high, the majority of the total number of jobs will continue to require relatively low skills." Secondary vocational education will be supplying the majority of new entry-level employees for the majority of the jobs.

Perhaps the notice and recommendations of the then Secretary of Education in the 1988 fiscal year budget that the Carl D. Perkins Vocational Education Act not be funded were the signals to vocational education that major changes would be required in order to justify continuing federal funding by reauthorization of the Act. The Secretary

of Education noted that the Department of Education now is a very minor actor in the vocational education enterprise. State and local governments spend about $11 for every Educational Department dollar spent on vocational education. By comparison, the Department of Labor spent about $3.2 billion on job training programs and private companies spent $30 to $40 billion on training programs for their employees. The Secretary of Education was looking at total dollars spent and may have assumed the small federal share for vocational education was not helping. Evidence was not readily available to support the effectiveness of vocational education on a national basis. The federal vocational education legislation did not require outcomes measures which resulted in limited data or research on the impact of vocational education.

One of the first positive responses to the negative recommendations from the Secretary of Education was by Merkel-Keller (1989). The paper concluded that:

> Across the states, vocational educators were implementing and evaluating vocational programs and ancillary projects which were meeting not only students' needs but the needs of the nation as a whole.
>
> All of the mandates of the Perkins Law were being addressed.
>
> Federal dollars were the source of programming in many cases that otherwise would not be undertaken or available were serving the targeted students or the impacted audience.

Even though the federal share was considered small, perhaps even as small as a five percent allocation, its presence provided critical impetus and funding to the under-served populations identified and highlighted in the legislation.

With respect to being responsive to the new legislation, Ryan and Norton (1991) offered the following positive comments:

> One of the most obvious challenges which will face vocational leaders is the implementation of the Carl D. Perkins Vocational and Applied Technology Act of 1990. Congress has spoken with this law and wants significant changes made. It is up to leaders at all levels to design programs that serve the intent of the new law and prepare America's youth for highly competitive work.
>
> Either we take action to plan and shape the future for ourselves and our institutions, or by default we run the risk of being molded and shaped by others in ways we may find unsatisfactory. Effective leaders choose proactively to shape the future.

Imel (1990) concluded that vocational education continued to be a multifaceted system with a diverse clientele and multiple goals, and it existed in a complex policy environment. Developing and implementing a system of performance standards for vocational education requires making demanding decisions on performance assessments, accountability, and actions.

Hochlander (1991) stated, "Creating successful accountability systems will require thought and care." The Perkins Act will require only that states adopt one measure of learning and competency gains in academic skills, plus a measure of at least one of the following: competency attainment, job or work skill attainment, and retention in school and placement. It is very important to select some measures that access changes in program outcomes or student gains over time.

Asche (1990) concluded that none of the outcome measures currently in use appeared to be sufficient for judging the quality of vocational education programs when used singly. However, some combination of labor

market outcomes, learner outcomes, and access outcomes seemed to hold promise for developing measurable standards of performance.

The Office of Technology Assessment (1989) report contained the following:

> The education and business communities now increasingly support the view that more exacting measurement of the quality of high school vocational programs may be needed. Many states, in response to growing pressures for academic reform, have begun to introduce academic material into the vocational curriculum and try to teach so called "higher-order thinking skills" that will benefit students throughout their careers. Many people now wish to see academic achievement included in vocational performance measurements, and would like to see improvements in testing technology to provide better assessments of higher-order cognitive abilities.
>
> An important role for the federal government to play is to encourage a broad view toward performance measurement. Because both the definition and attainment of program objectives are sensitive to local and regional differences, there is no single measure that can yield a national standard. Job placement, earning, unemployment, productivity and employer satisfaction are all assumed to be affected, to some degree, by the quality of an educational program.

Methodology

Population

The population for this study was the local secondary vocational administrators in the state of Tennessee. Each administrator or vocational director in the 1990-91 directory for Tennessee vocational-technical educators was included in the population.

Instrumentation and Data Collection

The survey instrument (Appendix A) was developed based upon intensive review of the new legislation. The instrument was reviewed by professional vocational educators from local systems and state staff as well as individuals from other states. Items were designed to secure

ratings from secondary vocational education administrators based upon the needs assessment criteria and standards of performance. An internal consistency reliability coefficient of .8734 was compiled for the administrators survey instrument.

Procedures

The administrators' survey forms were mailed to the local vocational director or administrator contained in the official State Directory. A cover letter signed by Assistant Commissioner Marvin Flatt and a stamped self-addressed envelope were provided to each eligible participant. Non-respondents were followed up by mail. Another survey form was mailed to the non-respondents along with a follow-up letter from Commissioner Flatt and another stamped self-addressed envelope. Efforts to secure additional useable completed survey instruments were terminated when a sufficient number was available.

Each survey form was reviewed by the project director and then coded for data entry. The submitted survey forms were screened and incomplete and unusable forms were not processed for data entry.

Simple and inferential statistics were used to analyze the data. The simple statistics were percentages, means, and standard deviation. The inferential statistics included analysis of variance to ascertain significant statistical differences. Items designated as significantly different were at the .05 level or lower.

The following research questions were used as the basis for guiding this research. The research questions are:

1. What are the perceptions of the local secondary vocational-technical education administrators of the extent their

teachers are meeting the needs assessment criteria as specified in the new legislation?

2. What are the areas of greatest need for secondary vocational-technical teachers?
3. What are the areas of greatest need for school systems?
4. Are the local secondary vocational-technical education programs meeting the needs of special populations?
5. Is there a difference in perceived needs at the local level by vocational administrators with certification as opposed to those without certification?

Findings

A total of thirty-two items were included in the survey which had a Likert response scale that ranged from 1=None to 9=Great Extent. Sixteen of the items pertained to the school in general and sixteen of the items to the vocational teachers. The first two tables will be presented in that order.

In Table 1, the lowest rated items were numbers four and five. Item 4--Do the private sector (partner agreements) have measurable objectives?--had a mean rating of 3.57. Item 5--Do craft committees annually evaluate the effectiveness of the private sector agreements?--also had a mean rating of 3.57. The third lowest mean rating of 3.66 was for item 6--Are your teachers annually securing employer ratings for each graduate? Item 3--Does each program have a private sector (partner) agreement?--had a mean rating of 3.71. Item 3 and 4 both pertain to private sector agreements. Item 14 was included to secure data pertaining to equal emphasis for college prep and career prep.

Item 15--Does your school system place and equal emphasis on preparing an individual for employment and further study?--had a mean rating of 5.02. With respect to a formal follow-up report, item 8--Do you have an annual formal follow-up report for each vocational-technical program?--had a mean rating of 5.03. Item 12--Are your teachers members of TVA, AVA, and the VSO?--also had a mean rating of 5.03. In the area of retention or dropout prevention, item 13 was included. Item 13--Are your vocational programs involved in a formal program for students at risk?--had a mean rating of 5.21. The first item in this section of the survey--Is the quality of vocational-technical programs improving?--had a mean rating of 6.59. The next item, 9, is related to item 1. Item 9--Are you implementing changes for vocational-technical program improvements?--had a mean rating of 6.72. The second item in this survey section pertaining to craft committees was item 2--Does each program have a functional craft advisory committee--which had a mean rating of 6.78. The next higher rated item was item 11--Are your teachers participating in professional improvements beyond local in-service programs?--had a mean rating of 6.92. The third highest rated item was item 10--Are your vocational programs integrating vocational student organizations (VSOs) into their instruction?--had a mean rating of 7.00. The second highest rated was item 7--Are your teachers teaching general employment skills needed for entry-level employment?--had a mean rating of 7.07. The last item in this section, item 14--Has increased graduation requirements had a negative effect on the number of students participating in the vocational-technical programs?--had a mean rating of 7.19.

Table 1

Vocational Administrators Perceptions on Items of Interest in the New Carl D. Perkins Vocational and Applied Technology Act From Lowest to Highest Mean Ratings

Item	Mean*	Standard Deviation
To what extent:		
Do the private sector (partner) agreements have measurable objectives?	3.57	2.45
Do the craft committees annually evaluate the effectiveness of the private sector agreements?	3.57	2.25
Are your teachers annually securing employer ratings for each program graduate?	3.66	2.13
Does each program have a private sector (partner) agreement?	3.71	2.49
Does your school system place an equal emphasis on preparing an individual for employment and further study?	5.02	2.12
Do you have an annual formal follow-up report for each vocational-technical program?	5.03	2.55
Are your teachers members of TVA, AVA, and the VSO?	5.03	2.27
Are your vocational programs involved in a formal program for students at risk?	5.21	2.69
Is the quality of vocational-technical programs improving?	6.59	1.74
Are you implementing changes for vocational-technical program improvements?	6.72	1.75
Does each program have a functional craft advisory committee?	6.78	1.99
Are your teachers participating in professional improvement activities beyond local in-service programs?	6.92	1.72
Are your vocational programs integrating official vocational student organizations (VSOs) into their instruction?	7.00	1.74
Are your teachers teaching general employment skills needed for entry-level employment?	7.07	1.49
Has the increased graduation requirements had a negative effect on the number of students participating in the vocational-technical education programs?	7.19	2.09

* N=97, Values on Likert Scale were from 1=None to 9=Great Extent

The vocational administrators' perceptions regarding the extent to which the teachers were performing are included in Table 2. Item 1, pertaining to annually securing and maintaining basic skill gain scores for each vocational student, had a mean rating of 4.02. The second lowest mean rating, 4.37, was for item 12--To what extent do your teachers have articulation agreements with post-secondary educational institutions? Item 8--To what extent do your teachers have employers review the vocational-technical instructional materials to ascertain if it is sufficient for each program offered to meet the demand of the work force?--had the third lowest mean rating of 4.90. The fourth lowest mean rating, 4.92, was on item 4, pertaining to documentation of the integration (reinforcing) of basic skills in their vocational programs.

Item 10--To what extent do your teachers have employers review each program to identify program needs for areas of emerging technologies?--had a mean rating of 5.00. The next higher mean rating was 5.01 for item 3, which pertained to the teachers documenting the increased student work skill attainment from one school year to the next. The seventh lowest mean rating, 5.04, was for item 9, which was the extent the teachers have employers review current and future labor market needs to ascertain if the existing program is relevant to the labor market needs. For item 2--To what extent do your teachers annually secure and maintain gain scores for vocational competencies for each student--the mean rating was 5.01. To what extent do your teachers experience sufficient counselor assistance for meeting the needs of disadvantaged students was item 14, and has a mean rating of 5.14. The mean rating for item 7 was 5.19, which was the extent your teachers have employers

Table 2

Vocational Administrators Perceptions Pertaining to the Extent Vocational Teachers are Performing on Selected Topics From Lowest to Highest Mean Ratings

Topic	Mean Score*	Standard Deviation
To what extent do your teachers:		
Annually secure and maintain basic skills gain scores for each vocational student?	4.02	2.12
Have articulation agreements with postsecondary educational institutions?	4.37	2.82
Have employers review the vocational-technical instructional materials to ascertain if it is sufficient for each program offered to meet the demand of the workforce?	4.90	2.29
Document the integration (reinforcing) of basic skills in their vocational instruction?	4.92	2.16
Have employers review each program to identify program needs for areas of emerging technologies?	5.00	2.32
Document the increased student work skill attainment from one school year to the next?	5.01	2.21
Have employers review current and future labor market needs to ascertain if the existing program is relevant to the labor market needs?	5.04	2.05
Annually secure and maintain gain scores for vocational competencies for each student?	5.10	1.93
Experience sufficient counselor assistance for meeting the needs of disadvantaged students?	5.14	2.39
Have employers review the vocational-technical instructional equipment to ascertain if it is sufficient to meet the demand of the workforce?	5.19	2.36
Have employers review the vocational-technical curriculum to ascertain if each program is providing needed entry skills for the workforce?	5.34	2.16
Experience sufficient school support (financial, other staff, and commitment from central administration for meeting the needs of special students?	5.75	2.05
Teach higher order competencies which reflect the hiring needs of employers?	5.95	1.75
Experience sufficient deficiencies remediation assistance of skills for disadvantaged students from VIP and/or VAP teachers?	6.08	2.15
Have a sequential course of study leading to academic and occupational competence for each vocational program?	6.23	1.98
Experience sufficient special education assistance for meeting the needs of handicapped students?	6.41	2.08

* N=97 Values on Likert Scale were from 1=None to 9=Great Extent

review the vocational-technical instructional equipment to ascertain if it is sufficient to meet the demand of the workforce. The last item in this table pertaining to employers is item 6, which was the extent your teachers have employers review the vocational-technical curriculum to ascertain if each program is providing needed entry skills for the workforce, and has a mean rating of 5.34. Item 15 has a mean rating of 5.75, which was the extent your teachers experience sufficient school support (financial, other, staff) and commitment from central administration for meeting the needs of special students. The fourth highest mean rating, 5.95, was for item 11, which was the extent your teachers teach higher order competencies which reflect the hiring needs of employers. Item 16 has a mean rating of 6.08, which was the extent your teachers experience sufficient deficiencies remediation assistance of skills for disadvantaged students from VIP and/or VAP teachers. The second highest mean rating, 6.23, was for item 5, which was the extent your teachers have a sequential course of study leading to academic and occupational competence for each vocational program. The highest mean rating for the table was 6.41 for item 13, which was the extent your teachers experience sufficient special education assistance for meeting the needs of handicapped students.

Comparing Perceptions by Certification

The ratings by the vocational administrators were compared on the basis of those with and without certification as a vocational administrator. The number for each group was as follows: fifty for those holding vocational administrator certificates and forty-seven for those without vocational administrator certification. The number of

respondents for each group was sufficient to conduct a one-way analysis of variance for statistical comparison purposes. Only the significantly different items and the lowest five mean ratings for each group will be included in the findings.

Six items in Table 3 had a significant statistical difference between the administrators by certification as a vocational administrator. Four of the significantly different items pertained to the vocational teachers working with employers. All six of the significantly different items had lower mean ratings for the administrator without vocational certification. The administrators without vocational administrators certification had higher mean ratings on four of the sixteen items. Please refer to Table 3 for complete details.

The items with statistical significant difference at the .05 level or lower were as follows:

To what extent do your teachers:

Item 3 Document the increased student work skill attainment from one school year to the next?

Item 7 Have employers review the vocational technical instructional equipment to ascertain if it is sufficient to meet the demand of the work force?

Item 8 Have employers review the vocational-technical instructional materials to ascertain if it is sufficient for each program offered to meet the demand of the workforce?

Table 3

Comparing Administrators Perceptions on Selected Items by Vocational Administrators Certification

Item	Mean: With Vocational Certification	Mean: Without Vocational Certification	F	PR>F
To what extent do your teachers:				
Annually secure and maintain basic skills gain scores for each vocational student?	3.88	4.17	.45	0.5035
Annually secure and maintain gain scores for vocational competencies for each student?	5.36	4.82	1.83	0.1797
Document the increased student work skill attainment from one school year to the next?	5.41	4.56	3.68	0.0582*
Document the integration (reinforcing) of basic skills in their vocational instruction?	4.76	5.08	.54	0.4624
Have a sequential course of study leading to academic and occupational competence for each vocational program?	6.29	6.14	.14	0.7089
Have employers review the vocational-technical curriculum to ascertain if each program is providing needed entry skills for the workforce?	5.69	4.95	2.89	0.0923
Have employers review the vocational-technical instructional equipment to ascertain if it is sufficient to meet the demand of the workforce?	5.89	4.42	10.34	0.0018*
Have employers review the vocational-technical instructional materials to ascertain if it is sufficient for each program offered to meet the demand of the workforce?	5.45	4.29	6.55	0.0120*
Have employers review current and future labor market needs to ascertain if the existing program is relevant to the labor market needs?	5.49	4.55	5.40	0.0223*
Have employers review each program to identify program needs for areas of emerging technologies?	5.47	4.48	4.55	0.0355*
Teach higher order competencies which reflect the hiring needs of employers?	6.33	5.53	5.43	0.0219*
Have articulation agreements with postsecondary educational institutions?	4.83	3.86	2.89	0.0925
Experience sufficient special education assistance for meeting the needs of handicapped students?	6.20	6.63	1.08	0.3022
Experience sufficient counselor assistance for meeting the needs of disadvantaged students?	4.82	5.48	1.92	0.1691
Experience sufficient school support (financial, other staff, and commitment from central administration) for meeting the needs of special students?	5.79	5.70	.05	0.8158
Experience sufficient deficiencies remediation assistance of skills for disadvantaged students from VIP and/or VAP teachers?	6.29	5.85	1.05	0.3074

N = 97 Values on Likert Scale were from 1= None to 9 = Great Extent

* Significance at .05 or Less

Item 9 Have employers review current and future labor market needs to ascertain if the existing program is relevant to the labor market needs?

Item 10 Have employers review each program to identify needs for areas of emerging technologies?

Item 11 Teach higher order competencies which reflect the hiring needs of employers?

The items with higher mean scores for the administrators without vocational administration certification but not significantly different were as follows:

Item 1 Annually secure and maintain basic skills gain scores for each vocational student.

Item 4 Document the integration (reinforcing) of basic skills in their vocational instruction.

Item 13 Experience sufficient special education assistance for meeting the needs of handicapped students.

Item 14 Experience sufficient counselor assistance for meeting the needs of disadvantaged students.

The lowest five mean ratings for the administrators with vocational certification from the lowest to the highest are as follows:

To what extent do your teachers:

Item 1 Annually secure and maintain basic skills gain scores for each vocational student?

Item 4 Document the integration (reinforcing) of basic skills in their vocational instruction?

Item 14 Experience sufficient counselor assistance for meeting the needs of disadvantaged students?

Item 2 Annually secure and maintain gain scores for vocational competencies for each student?

The lowest five mean ratings for the administrators without vocational certification from the lowest to the highest are as follows: To what extent do your teachers:

Item 12 Have articulation agreements with post-secondary educational institutions?

Item 1 Annually secure and maintain basic skills gain scores for each vocational student?

Item 8 Have employers review the vocational-technical instructional materials to ascertain if it is sufficient for each program offered to meet the demand of the workforce?

Item 7 Have employers review the vocational-technical instructional equipment to ascertain if it is sufficient to meet the demand of the workforce?

Item 10 Have employers review each program to identify program needs for areas of emerging technologies?

Four items in Table 4 had a significant statistical difference between the administrators by certification as a vocational administrator. The certified vocational administrator had higher mean ratings on fourteen out of the fifteen items. On item 15, the administrators without vocational administrator certification had the higher mean rating. The difference between the two groups was significantly different. Please refer to Table 4 for further details.

The items with statistical significant differences at the .05 level or lower were as follows:

To what extent:

Item 8 Do you have an annual formal follow-up report for each vocational-technical program?

Item 9 Are you implementing changes for vocational-technical program improvements?

Item 14 Has the increased graduation requirements had a negative effect of the number of students participating in vocational-technical education programs?

Item 15 Does your school place an equal emphasis on preparing an individual for employment and further study?

The lowest five mean ratings for the administrators with vocational-administrator certification from the lowest to the highest are as follows:

To what extent:

Item 5 Do the craft committees annually evaluate the effectiveness of the private sector agreements?

Item 4 Do the private sector (partner) agreements have measurable objectives?

Item 3 Does each program have a private sector (partner) agreement?

Item 6 Are your teachers annually securing employer ratings for each program graduate?

Item 15 Does your school system place an equal emphasis on preparing an individual for employment and further study?

Table 4

Comparing Administrators Perceptions on Items in the New Carl D. Perkins Act by Vocational Administration Certification

Item	Mean: With Vocational Certification	Mean: Without Vocational Certification	F	PR>F
To what extent:				
Is the quality of vocational-technical programs improving?	6.63	6.53	.09	0.7619
Does each program have a functional craft advisory committee?	6.88	6.65	.34	0.5613
Does each program have a private sector (partner) agreement?	3.89	3.51	.59	0.4462
Do the private sector (partner) agreements have measurable objectives?	3.79	3.32	.89	0.3470
Do the craft committees annually evaluate the effectiveness of the private sector agreements?	3.75	3.36	.72	0.3988
Are your teachers annually securing employer ratings for each program graduate?	3.89	3.40	1.32	0.2531
Are your teachers teaching general employment skills needed for entry-level employment?	7.33	6.78	3.43	0.0672
Do you have an annual formal follow-up report for each vocational-technical program?	6.01	3.97	18.30	0.0001*
Are you implementing changes for vocational-technical program improvements?	7.05	6.36	3.96	0.0496*
Are your vocational programs integrating official vocational student organizations (VSOs) into their instruction?	7.23	6.74	1.97	0.1633
Are your teachers participating in professional improvement activities beyond local in-service programs?	7.01	6.80	.36	0.5473
Are your teachers members of TVA, AVA, and the VSO?	5.23	4.80	.87	0.3533
Are your vocational programs involved in a formal program for students at risk?	5.48	4.91	1.10	0.2971
Has the increased graduation requirements had a negative effect on the number of students participating in vocational-technical education programs?	7.72	6.63	7.05	0.0093*
Does your school system place an equal emphasis on preparing an individual for employment and further study?	4.60	5.46	4.21	0.0429*

N = 97 Values on Likert Scale were from 1= None to 9= Great Extent

* Significance at .05 or less

The lowest five mean ratings for the administrators without vocational administrator certification from the lowest to the highest are as follows:

To what extent:

Item 4 Do the private sector (partner) agreements have measurable objectives?

Item 5 Do the craft committees annually evaluate the effectiveness of the private sector agreements?

Item 6 Are your teachers annually securing employer ratings for each program graduate?

Item 3 Does each program have a private sector (partner) agreement?

Item 8 Do you have an annual formal follow-up report for each vocational-technical program?

Demographics

In order to facilitate a better understanding of the administrative respondents, a demographics section has been included. The administrative respondents have been grouped according to certification as a vocational education administrator. This grouping will help to provide additional windows for interpreting the other findings. Four tables will be included in this section.

The mean number of years teaching for both groups are 18.45 for the administrators with certification and 21.71 for those without certification as a vocational administrator. Please refer to Table 5. The mean number of years for teaching vocational subjects has a larger spread with 12.64 years for those with certification and 4.97 for those without certification. The respondents with certification had 10.83 years in vocational administration, and those without vocational certification had 7.02 years. In the area of years of service with the present system, those with certification had 18.79 years and those without certification had 17.39 years. The respondents with certification had 9.20 years to planned retirement, and those without certification had 10.15.

Three areas need to be analyzed by looking at the standard deviation as well as the means. By including the large school systems and the small systems the variance is reflected for the number of vocational teachers, total secondary enrollments, and number of students participating in vocational education. These findings were expected as a result of grouping the respondents by certification as opposed to size of systems or number of students. The number of vocational teachers in

Table 5

Comparing Demographics for Vocational Administrators by Certification as a Vocational Director

Item	Certification					
	Yes			No		
	N	Mean	S.D.	N	Mean	S.D.
Total years teaching	47	18.45	8.15	46	21.71	7.92
Total years teaching vocational subjects	48	12.64	7.92	44	4.97	7.09
Total years in vocational administration	49	10.83	6.62	46	7.02	5.63
Number of years with present system	49	18.79	7.60	46	17.39	8.49
Years to planned retirement	40	9.20	6.06	40	10.15	5.96
Number of vocational teachers in system	48	39.00	65.55	47	12.40	11.82
Number of Building Level vocational administrators	49	1.14	1.09	46	0.89	1.19
Number of vocational supervisors on staff	48	1.08	1.38	46	0.50	0.50
Number of secondary students in system	46	2346.91	2458.92	40	1183.85	1513.81
Number of secondary students participating in vocational education	41	1684.09	2874.98	38	581.94	608.12

the system for those with certification had a mean of 39 with a standard deviation of 65.55, and for those without certification, the mean was 12.40 with a standard deviation of 11.82.

The mean number of secondary students in the system for those with certification was 2346.91 with a standard deviation of 2458.92, and 1183.85 mean with a standard deviation of 1513.81 for those without certification. The mean number of secondary students participating in vocational education was 1684.09 with a standard deviation of 2874.98 for those with certification, and 581.94 mean with 608.12 standard deviation for those without certification.

The two remaining areas in Table 5 pertain to the number of building level administrators and supervisors. The mean number of building level administrators for those with certification was 1.14 and .89 for those without vocational certification. The mean number of vocational supervisors on staff was 1.08 for those with certification and .50 for those without certification.

In addition to vocational administrative certification, the respondents provided information pertaining to other certification areas, such as supervisors, principal, and superintendent. Table 6 contains the breakdown for each additional certification by vocational certification. Of the respondents with vocational administrative certification, 68% had supervisory certification, and 32% did not. Of the respondents without vocational administration certification, 68% had supervisory certification, and 32% did not. Of the respondents with vocational administrators' certification, 74% also had the principals'

Table 6

Demographics for Respondents to Vocational Administrators Needs Assessment by Vocational Administrators Certification

Area	Vocational Certification					
	Yes			No		
	Yes	No	Total	Yes	No	Total
Supervisor Certification	34	16	50	32	15	47
	68.0%	32.0%		68.0%	32%	
Principal	37	13	50	35	12	47
	74.0%	26.0%		74.5%	25.5%	
Superintendent	29	21	50	27	20	47
	58.0%	42.0%		57.5%	42.5%	
None	2	48	50	8	39	47
	4.0%	96.0%		17.0%	83%	

N = 97

certificate, and 26% did not; and of the respondents without vocational administrative certification, 74.5% had the principals certificate, and 25.5% did not.

Similar findings were also in the area of certification as a superintendent. Of the respondents with vocational administrative certification, 58% were also certified as a superintendent, and 42% were not; and of the respondents without vocational administrative

certification, 57.5% were certified as a superintendent, and 42.5% were not. Each category by certification as a vocational administrator had some respondents reporting no certifications. Of the respondents with vocational administrative certification, 4% also marked no certification; and of the respondents with no vocational administrative certification, 17% marked no certification.

An analysis of highest education level attained for the respondents is included in Table 7. The respondents are grouped according to their certification as a vocational administrator. Of the respondents with vocational administrative certification, 2.06% had a minimum of a bachelors degree, and 2.06% of the respondents without vocational administrative certification had a bachelors degree. Of the respondents with vocational administrative certification, 40.21% had a masters degree, and 29.9% of those without vocational administration certification had a masters degree. The percentage of those with vocational administrative certification and a specialists degree was 5.15%, and 10.31% for those without vocational administrative certification. The highest degree level--doctorate--was held by 4.12% of the respondents with vocational administrative certification, and 6.19% for the respondents without vocational administrative certification.

Table 7

Highest Education Level for Respondents to Vocational Administrators Needs Assessment

	Vocational Administrators Certification	
Degree	Yes	No
Bachelors	2	2
	2.06%	2.06%
Masters	39	29
	40.21%	29.9%
Specialists	5	10
	5.15%	10.31%
Doctorate	4	6
	4.12%	6.19%

N = 97

The last table for demographics is Table 8, which contains the vocational subject background of the respondents. The largest category was other than vocational, which was 30.2% of the respondents. The remainder of the respondents have vocational subject backgrounds. Agriculture had the second largest percent with 19.8%. The third largest percent was Industrial Arts and Trade and Industry with 14.6% each. The next largest percent was 11.5% for Business Education. Marketing Education had 5.2%, and Home Economics was the least with 4.2%.

Table 8

Vocational Subject Background for Respondents to Vocational Administrators Needs Assessment

Subject	N	%
Agriculture	19	19.8
Business Education	11	11.5
Home Economics	4	4.2
Industrial Arts	14	14.6
Marketing	5	5.2
Trade and Industry	14	14.6
Other	29	30.2

N = 96

Barriers

One of the areas to be addressed is the identification and elimination of barriers which restrict students' participation in vocational education. Two types of barriers and local actions taken have been included in the report. The first is focused around the student and the second is more generic.

The local vocational administrative respondents were requested to write in specific barriers their high school students were encountering for participating in vocational-technical education. The responses were grouped and are included in Table 9. The most frequently listed barrier was increased graduation and college entrance requirements. The second most frequently

listed barrier was scheduling limitations. The above two barriers account for 50% of those listed. The remaining barriers in descending order are: student counseling and guidance, poor image of vocational education, inadequate funding, basic skills and student motivations, transportation, course offerings, and other.

Table 9

Barriers Students Encountered for Participating in Vocational-Technical Education as Provided by Vocational Administrators

Barriers	Number of Listings
Graduation and College Entrance Requirements	52
Scheduling Limitations	40
Student Counseling and Guidance	24
Poor Image	19
Inadequate Funding	16
Basic Skills and Student Motivation	12
Transportation	6
Course Offerings	5
Other	7
Total	181

A variety of actions were provided by the local administrators for eliminating the barriers. The complete listing and frequency may be found in Table 10. The most frequently listed action was revision of scheduling. The second most frequently listed action was pertaining to

student counseling and recruitment. The third most frequently listed action was program promotion. The above three actions account for over 50% of the actions listed. The remaining actions in descending order are: new courses, integrating vocational and academics, fund raising, student recognition, and other.

Table 10

Action Taken to Eliminate the Barriers as Provided by Vocational Administrators

Activities	Number of Listings
Revision of Scheduling	28
Student Counseling and Recruitment	23
Program Promotion	21
New Courses	19
Integrating Vocational and Academics	11
Fund Raising	7
Student Recognition	1
Other	16
Total	126

In another question, barriers were delineated by inserting non-physical before the word barrier, and the question was personalized to the respondent. The non-physical barriers and their frequency may be found in Table 11. The most frequently listed non-physical barrier encountered by the respondents was inadequate funding. The second most frequently listed was poor image. The third most frequently listed was

lack of cooperation. The above three non-physical barriers account for over 50% of those listed. Please refer to Table 11 for the remainder of the barriers listed.

Table 11

Non Physical Barriers Encountered at the Local Level for Offering Effective Vocational-Technical Programs as Provided by the Vocational Administrators

Barrier	Number of Listings
Inadequate Funding	31
Poor Image	24
Lack of Cooperation	11
Graduation Requirements	9
Guidance Counselors	6
Out-dated Equipment	5
Scheduling Classes	4
Lack of Time	3
Parents Involvement	2
Assessment	1
Slow to Change	1
Class Space	1
Honors	1
Politics	1
Placement	1
Total	101

Local vocational administrators provided a variety of actions they had initiated in order to eliminate the non-physical barriers(s) listed. The most frequently listed action was securing funds from sources other than education. The second most frequently listed was student orientation. The third most frequently listed was public relations within the school. The above three actions account for over 50% of the actions listed. Please refer to Table 12 for a complete listing.

Table 12

Action Taken to Eliminate Non Physical Barriers as Provided by Vocational Administrators

Activities	Number of Listings
Secured Funds From Sources Other Than Education	19
Student Orientation	15
Public Relations Within the School	11
Planning	10
Involvement by Industry	9
In-Service	3
Cooperation With Board of Education	2
Counselors	2
Overload Classes	2
Integrate Classes	2
Relocating	1
Total	76

In-service

Local systems now have funds for allocating local in-service programs in response to meeting the needs of their vocational-technical teachers. The state-wide responses to an open-ended item requesting recommendations from the local vocational administrators are contained in Table 13. Only the five most frequently listed recommendations will be discussed. Please refer to Appendix B for complete listing.

Recommendations were clustered by topics to aid in tabulations. The five most frequently listed in-service recommendations in descending order are as follows:

1. Special education requirements and needs
2. Integration of vocational and academic
3. Teaching basic skills
4. State summer conference in Murfreesboro: improving programs
5. Vocational teachers exposed to business and industry

Conclusions

Accountability is not new to the majority of vocational educators in Tennessee. Many of the items in the former state vocational evaluation system are contained in the new legislation. The local systems participating in the state vocational evaluation system have already formulated local five year plans for improvement. The majority of these systems should already be able to provide evidence of meeting the needs of secondary vocational education students, which would include the special needs students. Local systems that elected another evaluation system may not be so fortunate They will be called upon to produce evidence of meeting the needs of the students without the benefit of transition.

Statewide data and information secured in this study will establish baseline objective measurements. It is recognized that local needs assessments will be the basis for local decisions and planning. Each local system will have flexibility in meeting their identified needs. All systems receiving federal vocational education funds will be called upon to show improvement on the needs assessment criteria and performance standards in the new legislation. Tennessee will be able to corroborate on a state-wide basis, improvements over time by conducting pre-and post-assessment surveys. The initial assessment provides a profile of needs on a state-wide basis. Local plans for improvement based on their own needs assessment will vary across systems.

Local educational systems will be allocating federal funds without former state flow-through approval. However, the state will review each

plan submitted for approval. A state-wide profile of the areas with the greatest needs may assist in the approval process.

All-Respondents

The items reported in Tables 1 and 2 pertain to all respondents. By analyzing the lowest five items from each table, it is readily evident that additional work with employers is warranted. Six of the lowest rated ten items from the two tables pertain to working with employers. More specifically, the areas with employers are as follows: reviewing instructional material, identifying program needs, having private sector agreements, private sector agreements containing measurable objectives, craft committees annually evaluating programs, and securing employer ratings of graduates.

Two of the lowest rated ten items pertain to basic skills, which are: annually securing and maintaining basic skills gain scores for each student, and documenting the integration (reinforcing) of basic skills in vocational instruction. The remaining two items are: articulation agreements and equal emphasis on College Prep and Career Prep.

The above ten lowest rated items from Tables 1 and 2 are cross referenced to the federal needs assessment criteria 1, 3, 4, 7, 8, 9, and 11 and to performance standards 1, 2a, 2b, 2d, and 3a.

Other areas deserving consideration are: annual follow-up reports for each program, students-at-risk (retention), increased student work skill attainment, employers ascertaining program relevance, securing and maintaining vocational competency gain scores, and counselor assistance

to help special needs. Additional federal needs assessment criteria are 6, 11, and performance standards 3b.

Comparing Perceptions by Certification

Of the thirty-one items included in Tables 3 and 4, ten were significantly different between the respondents with vocational administrative certification, and those without vocational certification. The mean ratings for the vocational administrators without vocational administrative certification were lower on nine of the items than the respondents with vocational administrative certification. The nine items were as follows: documenting the increased student work skill attainment, employers reviewing instructional equipment, employers reviewing instructional materials, employers identifying program needs for emerging technologies, employers determining program relevancy for current and future labor market needs, teaching higher order competencies, formal follow-up reports for each program, implementing changes for improvement, and increased graduation requirements having a negative effect on vocational participation.

The one item with a significant difference and a higher mean rating for respondents without vocational certification was pertaining to an equal emphasis from the system on preparing individuals for employment and further study.

Overall, the mean scores for the respondents with vocational administrative certification were higher on twenty-six of the thirty-one items in Tables 3 and 4 than the respondents without vocational administrative certification. The five items with higher mean ratings

for the respondents without vocational certification pertained more to their schools in general than vocational items.

Demographics

The respondents with and without vocational administrative certification were similar with respect to additional certifications beyond the vocational administrative certification. The highest education level attained by both groups was also similar. The respondents with vocational administrative certification had more than two times as many years teaching vocational subjects than the respondents without vocational administrative certification.

Thirty percent (30%) of the respondents did not have a vocational background. The remaining respondents had backgrounds in vocational areas and are as follows in descending order: Agriculture, Trade and Industrial, Industrial Arts, Business Education, Marketing, and Home Economics.

Barriers

Many barriers and actions taken to eliminate the barriers were provided by the respondents. However, several barriers remain and may be beyond the control of the local vocational administrator. More specifically, increased graduation and college entrance requirements, scheduling limitations, student counseling and guidance, and inadequate funding were the most frequently listed. Actions were taken to address these barriers, but obviously, the barriers remain. The increased graduation and college entrance requirements are still the same, and high school graduation requirements may be increased again. Most school systems are on a six period day which further limits scheduling

flexibility. Many of the two- and three-hour block classes have been reduced to one-hour classes. There remains considerable difference on the perception of the adequacy and lack of bias from counselors and guidance. Preparing for college or further study remains a primary emphasis of high schools. In the area of funding, the supplemental activities cannot eliminate the needs for increased funding from local and state government.

Local systems are taking actions to mitigate the effects of the barriers. Efforts such as revision of vocational class time requirements, program promotion, new courses, fund raising, student recognition, student orientation, in-service and involvement by business and industry are notable and helpful. The local vocational administrators are actively intervening to address the barriers within the parameters of their control.

In-service

Five in-service recommendations were most frequently listed by the vocational administrators. This listing is state-wide and should not be interpreted as being the five most pressing in-service needs for all local systems. Local systems now have the flexibility to identify and plan for meeting prioritized in-service needs. Local needs assessments will result in a different set of prioritized needs for each local system. However, many of the systems should have one or more of the five most frequently listed in-service recommendations as contained in the state-wide listing.

From the local vocational administrators perspective, special needs emerge as the most frequently recommended in-service program for the

vocational-technical teachers. The second most frequently listed recommendation was integrating vocational and academic education. Teaching basic skills was the third most frequently listed in-service recommendation. The above three most frequently listed recommendations are cross referenced with needs assessment criteria numbers 1, 3, 6, 7, and 11 and standards of performance areas 1, 2a, 2b, 3a, and 3b. Local educational systems should be able to provide evidence of improvement in the above areas at the program level and as a system by offering local in-service programs to meet these identified state-wide needs.

Annual in-service type experiences are provided at the state summer conference. Topics for presentations, papers, and discussions on the above three most frequently listed recommendations will benefit those in attendance. Those electing not to attend the summer conference would be more dependent on local programs.

The fifth most frequently listed in-service recommendation pertained to vocational teachers exposure to business and industry. This may be cross referenced to needs assessment criteria numbers 5, 8, 9, and 10 and standards of performance areas 2b and 2d. The relevance of programs through a variety of involvement by local business and industry with the vocational-technical teachers will not happen on its own initiative. Local vocational administrators will need to be innovative and creative in planning for these experiences to occur.

Summary

Vocational education is caught in the middle of many challenges and changes. At the federal level, the legislators realized that the very welfare of our country depends on a well-educated, skilled workforce. By introducing heightened accountability for vocational education, it is their intent for our employers to have access to a pool of better educated, skilled graduates. They, the legislators, did not have sufficient data and information which clearly demonstrated the effectiveness of vocational education at the federal, state, or local levels. They were persuaded to fund vocational education for five more years which would provide the time needed to secure summative data. Further, they provided for flexibility at the local level to identify local needs and to plan accordingly.

We have an opportunity to produce the data and information requested. Maintaining the status quo without improving programs or increasing the skill levels of the graduates is not in harmony with Governor McWherter's educational reform initiatives or the new legislation. The areas for special attention are contained in the needs assessment criteria and performance standards. Initial state-wide bench marks are being established through this study and others. Three or four years from now, the improvements will be measured through another probe. The gains and improvements depend upon what occurs at the local level.

Specific areas have been identified and discussed in this study that deserve serious attention. The majority of our secondary vocational-technical teachers are doing a good job and deserve

recognition. Weak and ineffective programs must be improved or eliminated. Barriers to students participating in quality secondary vocational-technical programs must be eliminated. Students participating in vocational-technical education deserve equal services and attention from public education. For many of our vocational-technical education students, relevant quality vocational-technical education is required to enable them to start a successful meaningful career.

Implications

There are no magic formulas or quick fixes available for local or state vocational education administrators or officials. What is available, though, are indicators of existing perceptions of how local vocational education teachers and systems are currently meeting the federal needs assessment criteria and standards of performance areas. The mean values reported in the findings reflect a measure of perception for each item between none and extensive or from possible values of one to nine. In the absence of having required current status for allowing anyone to know when they have arrived, the lowest mean values for certain items do indicate these may be the areas for greatest concern or need. This is not to imply that mean values above the lowest ten items per table are acceptable. Each reviewer of this report should integrate these findings along with other indicators in light of the federal needs assessment criteria and standards of performance for decisions pertaining to courses of action and allocating resources to meet the needs.

Decisions at the local level for allocating resources will be reflected in each local plan. Improvement needs areas will vary from one system to another and within systems with multiple schools. The mean values contained in this report are based on state-wide data. Therefore, these findings should not be used as the basis for local needs assessments. They do, however, provide a profile at the state level and can be used as the basis for measuring progress during the time frame of this federal legislation.

It should be readily evident to vocational education professionals of the need for more formal reporting, monitoring, and securing of information. Evidence at the local level must be available to clearly demonstrate that vocational education is effective and deserves to remain a viable companion to preparing for college. These two purposes of a high school education do not have to be mutually exclusive. The goals and objectives have been specified for secondary vocational education through the federal needs assessment criteria and standards of performance. Each local vocational education administrator would be well advised to keep the criteria and standards in focus for the system and individual vocational programs during each school year. Early intervention to help marginal or ineffective vocational programs and/or teachers is necessary in order to demonstrate actions are being taken to improve secondary vocational education. Maintaining the status quo at the local level with no evidence of intervention for improvements will invite active intervention by the state.

Significant differences were established between the ratings from the vocational administrator with and without certification as a vocational administrator. Further, the mean values reported by the respondents with vocational certification were higher on 84% of the items in Tables 1 and 2. The remaining items with higher mean values for the respondents without vocational certification pertained to general education. From a state-wide perspective, these findings do suggest more improvement for vocational education is needed in systems with vocational administrators not certified as a vocational administrator.

Barriers preventing students from participating in vocational education identified in the study are serious and need to be addressed. The vocational administrators have taken action on these barriers within the scope of their authority. However, the limitation of scheduling may be due to offering six periods with increased graduation and college entrance requirements. Small school systems and systems with emphasis on preparing students for college will continue to experience more serious barriers than large systems and systems with a balanced emphasis on preparing for employment and further study. In systems with an unbalanced emphasis toward college preparation, the access to and opportunity for participation in quality vocational education may remain a barrier without changes. The difficulties for scheduling secondary students will remain unless systems are allowed to offer seven periods per day. Additional high school graduation requirements will further compound the barriers for participating in secondary vocational education.

A related barrier identified in the study is perceived difference with respect to sufficient counselor and guidance assistance. The increased requirements for formal follow-up, placement reports, employer ratings, vocational and basic skill gain scores, and integration of basic skills mandate centralized, orchestrated assistance. Secondary vocational-technical teachers do not have released time to secure the data or to write up the formal reports. If existing high school counselors do not provide assistance in these areas, then a counselor for vocational education may be necessary. For example, placement into employment reports are just as important as placement into college,

especially when one considers the majority of the jobs in this country do not require a college education. The impact on secondary vocational-technical teachers will be very heavy if they do not receive assistance.

The federal legislation calls for increased relevance and involvement by employers. The mean values from the respondents on items pertaining to employer involvement were significantly different between the administrators with and without vocational administrators certification. Four of the ten items that had significant differences were on items involving employers. A commitment is needed to involve the employers more in local systems where the vocational administrator does not have vocational administrative certification. Planning for improvements for providing relevant quality secondary vocational-technical education will be seriously hampered without additional efforts to involve employers at the local level.

Special needs students, the disadvantaged and handicapped, are entitled to equal services under the 14th Amendment to the United States Constitution. In fact, the federal legislation specifies their needs must be addressed. Intervention to remediate deficiencies in order to enable them to have a more equitable opportunity for employment is the intent of the legislation. Local school systems should have a formal program to retain students other than to simply enroll the students into vocational-technical education. All students need guidance in developing a realistic four year high school plan. This is especially true for the special needs students. All students should be able to sequence the vocational and required high school courses in order to maximize preparing for a career or further study. Students that are

allowed to "graze" or take a variety of vocational courses are not as well prepared to enter the labor market upon graduation compared to the students taking three or more credits within one program area. Realistic guidance that is unbiased would help the majority of the high school students to be prepared for further study or to enter the labor market with sufficient skills.

All high schools should have formal articulation agreements with post-secondary educational institutions. The systems with vocational administrators without vocational administrative certification rated this item the lowest in Table 3. Students should have the option of entering post-secondary institutions with advanced standing, especially when they complete three or more units within one program area. Some of the programs may need to increase student expectations and program standards. However, high school students will favorably respond to relevant practical vocational education.

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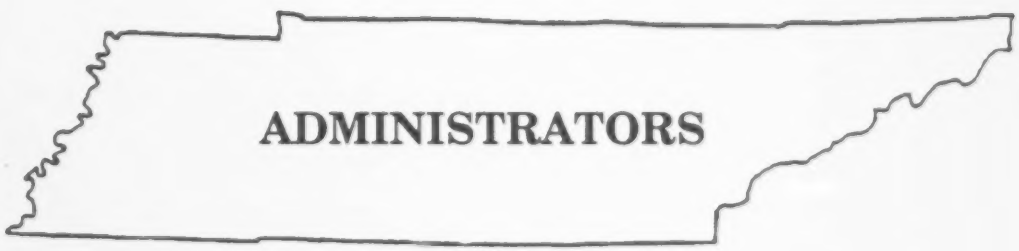
APPENDIX A

TENNESSEE

VOCATIONAL

NEEDS

ASSESSMENT



1. This survey is funded by the Tennessee State Department of Education, Division of Vocational-Technical Education, for the purpose of collecting state-wide information in accordance with requirements of the Carl D. Perkins Vocational and Applied Technology Education Act of 1990 and the Tennessee Goals and Objectives of the 21st Century Challenge Plan.

2. Your participation is very important. Please complete the survey form and return it in the enclosed stamped, self-addressed envelope.

Vocational Administrators' Needs Assessment

The new federal law for vocational-technical education will require more documentation for accountability purposes. One of the new requirements is an annual assessment from the local school systems receiving federal vocational-technical funds. This collective information will be reviewed by a panel of practitioners and will be considered for inclusion in the State Plan. Please take the time as soon as possible to respond to the items. There are no right or wrong answers. No individual system will be identified. Only collective data will be reported.

Section A

To what extent do your teachers:

	None								Great Extent
1. Annually secure and maintain basic skills gain scores for each vocational student?	1	2	3	4	5	6	7	8	9
2. Annual secure and maintain gain scores for vocational competencies for each student?	1	2	3	4	5	6	7	8	9
3. Document the increased student work skill attainment from one school year to the next?	1	2	3	4	5	6	7	8	9
4. Document the integration (reinforcing) of basic skills in their vocational instruction?	1	2	3	4	5	6	7	8	9
5. Have a sequential course of study leading to academic and occupational competence for each vocational program?	1	2	3	4	5	6	7	8	9
6. Have employers review the vocational-technical curriculum to ascertain if each program is providing needed entry skills for the work force?	1	2	3	4	5	6	7	8	9
7. Have employers review the vocational-technical instructional equipment to ascertain if it is sufficient to meet the demand of the workforce?	1	2	3	4	5	6	7	8	9
8. Have employers review the vocational-technical instructional materials to ascertain if it is sufficient for each program offered to meet the demand of the workforce?	1	2	3	4	5	6	7	8	9
9. Have employers review current and future labor market needs to ascertain if the existing program is relevant to the labor market needs?	1	2	3	4	5	6	7	8	9
10. Have employers review each program to identify program needs for areas of emerging technologies?	1	2	3	4	5	6	7	8	9
11. Teach higher order competencies which reflect the hiring needs of employers?	1	2	3	4	5	6	7	8	9
12. Have articulation agreements with postsecondary educational institutions?	1	2	3	4	5	6	7	8	9
13. Experience sufficient special education assistance for meeting the needs of handicapped students?	1	2	3	4	5	6	7	8	9
14. Experience sufficient counselor assistance for meeting the needs of disadvantaged students?	1	2	3	4	5	6	7	8	9
15. Experience sufficient school support (financial, other staff staff, and commitment from central administration) for meeting the needs of special students?	1	2	3	4	5	6	7	8	9
16. Experience sufficient deficiencies remediation assistance of skills for disadvantaged students from VIP and/or VAP teachers?	1	2	3	4	5	6	7	8	9

To what extent:

	None								Great Extent
1. Is the quality of vocational-technical programs improving?	1	2	3	4	5	6	7	8	9
2. Does each program have a functional craft advisory committee?	1	2	3	4	5	6	7	8	9
3. Does each program have a private sector (partner) agreement?	1	2	3	4	5	6	7	8	9
4. Do the private sector (partner) agreements have measurable objectives?	1	2	3	4	5	6	7	8	9
5. Do the craft committees annually evaluate the effectiveness of the private sector agreements?	1	2	3	4	5	6	7	8	9
6. Are your teachers annually securing employer ratings for each program graduate?	1	2	3	4	5	6	7	8	9
7. Are your teachers teaching general employment skills needed for entry-level employment?	1	2	3	4	5	6	7	8	9
8. Do you have an annual formal follow-up report for each vocational-technical program?	1	2	3	4	5	6	7	8	9
9. Are you implementing changes for vocational-technical program improvements?	1	2	3	4	5	6	7	8	9
10. Are your vocational programs integrating official vocational student organizations (VSOs) into their instruction?	1	2	3	4	5	6	7	8	9
11. Are your teachers participating in professional improvement activities beyond local in-service programs?	1	2	3	4	5	6	7	8	9
12. Are your teachers members of TVA, AVA, and the VSO?	1	2	3	4	5	6	7	8	9
13. Are your vocational programs involved in a formal program for students at risk?	1	2	3	4	5	6	7	8	9
14. Has the increased graduation requirements had a negative effect on the number of students participating in vocational-technical education programs?	1	2	3	4	5	6	7	8	9
15. Does your school system place an equal emphasis on preparing an individual for employment and further study?	1	2	3	4	5	6	7	8	9

16.A. What barriers do your high school students encounter participating in vocational-technical education?

1. _____

2. _____

3. _____

B. What have you initiated to eliminating the non physical barrier(s)?

1. _____

2. _____

3. _____

17.A. What non physical barriers do you encounter at the local level for offering effective vocational-technical programs?

1. _____

2. _____

3. _____

B. What have you initiated to eliminate each barrier?

1. _____

2. _____

3. _____

18. What in-service programs would you recommend for your vocational-technical teachers?

1. _____

2. _____

3. _____

4. _____

5. _____

Section B **Demographics**

1. _____ Total years teaching
2. _____ Total years teaching vocational subjects
3. _____ Total years in vocational administration
4. _____ Number of years with present system
5. _____ Years to planned retirement
6. _____ Number of vocational teachers in system
7. _____ Number of Building Level vocational administrators
8. _____ Number of vocational supervisors on staff
9. _____ Number of secondary students in system
10. _____ Number of secondary students participating in vocational education
11. _____ Is your system Rural or Urban?
12. What is your vocational subject matter background? (Please check one)

_____ Agriculture Education

_____ Business Education

_____ Health Occupations

_____ Home Economics

_____ Technology Education (Industrial Arts)

_____ Marketing

_____ Trade and Industrial

_____ Other Please list _____

13. Highest Education Level Attained (Please check one)

_____ BS

_____ MS

_____ Specialists

_____ Doctoral

14. What administrative certificates do you have? (Please check all that apply)

____	Supervisor	____	Superintendent
____	Principal	____	None
____	Vocational Administrator		

Section C

Administrator's Questionnaire

Section 113 (a)(3)(A) of the Carl D. Perkins Act calls for an analysis of the relative academic, occupational training and retraining needs of secondary, adult, and postsecondary students. Please provide county-wide information from your county.

1. County _____

2. Literacy rate for the county _____

3. A) Number of high school dropouts _____

   B. Percent of high school dropouts to total high school enrollment _____%

4. From Employment Security and/or Department of Labor or other local sources:

   A. Number of job turnovers for your county _____

   B. Replacement rate for your county _____

   C. Identified retraining needs:

	Industry or Occupational Area	Type of Retraining Needed
1.	_____	_____
2.	_____	_____
3.	_____	_____

5. Labor force demands for your service delivery area trends. (Information may be secured from Tennessee Occupational Information Coordinating Committee, local Employment Security, local Advisory Councils, Chamber of Commerce, Economic Development). In your professionsl opinion, what are the Demand Indicators for each area below? Is the labor demand Stable, Increasing, or Decreasing? For each program area, please put an S for Stable, I for Increasing, or a D for Decreasing.

	Areas	Demand Indicator	For areas with an I indicator, what educational institutions are providing skilled employees?
A.	Agriculture	____	_____
B.	Business and Office (VOE)	____	_____
C.	Service Area-Marketing	____	_____
D.	Health Care	____	_____
E.	Trade and Industrial	____	_____
F.	Technical or Scientific	____	_____

6. County population trends (Based on population from census)

   1980 ____ 1990 ____

7. Demographic Information and Test Results of Students by Educational Institution

High School	Average ACT or SAT	Average (TCAP) Basic Skills			Grad. Rate	Total No. of Students	Total No. of Students in Voc. And Applied Technology	Percent of Voc. to Total
		Math	English	Science				
1.								
2.								
3.								
4.								
5.								
6.								
7.								
8.								
9.								
10.								
11.								
12.								

1. The survey form was developed by Don E. McNelly, Gregory C. Petty, and Ed Mann of the Department of Technological and Adult Education, The University of Tennessee, Knoxville.

2. Review of this instrument was provided by education professionals from other states, staff from Tennessee State Department of Education, Division of Vocational-Technical Education, Nashville, and selected Tennessee local Vocational Education Administrators.

3. This research is conducted in accordance with directives of Vocational and Applied Technology Education Act of 1990 and the Tennessee Goals and Objectives of the 21st Century Challenge Plan.

4. Your cooperation and participation is greatly appreciated.

APPENDIX B

Table 13

Recommended In-Service Programs for Secondary Vocational-Technical Education Teachers by Vocational Administrators

Programs	Number of Listings
A. Improving Programs	
Integration of vocational and academic	10
State summer conference at Murfreesboro	8
Shop safety	4
Classroom management	3
Articulation activities	2
Visit other school systems	1
Instructional strategies	1
How to develop "cross-over" teaching agreements	
Teacher needs and program objectives	
Site based management	
Teacher exchange days	
Accountability documentation	
How to effectively use results of follow-up studies	
Planning	
Effective use of diagnostic data	
State-of-the-art equipment in-servicing	
How to operate an up-to-date program	
Updates of current happenings in vocational education	
TIMs training	
Mentoring with other systems	
Leadership courses	
Student-teacher interaction	
Shop maintenance, teacher and students	
TVA summer conference	
Teachers prepare a course overview for administrators and counselors	
Accountability for the skills of our students	
Accountability studies	
Audio-visual materials	
B. Funding	
How to receive additional funding	

Table 13, Continued

Recommended In-Service Programs for Secondary Vocational-Technical Education Teachers by Vocational Administrators

Programs	Number of Listings
C. Students	
At-risk students	5
Self-esteem workshop	1
Motivation	
Drug abuse	
How to communicate with today's teenager	
Drug awareness	
D. Curriculum	
Updating curriculum to meet needs of today's labor market	4
Curriculum development	4
Teaching higher technology in classes	3
Safety and First Aid	
Technical updates	
Using curriculum guide	
State planned programs	
E. Basic Skills	
Teaching basic skills	9
Relate basic skills to practical application	1
Study skills	
Teaching reading in content area	
F. Special Education	
Special education requirements and needs	19
Working with a special population	
G. Counseling	
Follow-up and placement	3
Importance and advantages of vocational education	
Vocational interest tests	
Employment trends	
Counselor indoctrination	
Career development	
Measurement of proficiency	

Table 13. Continued

Recommended In-Service Programs for Secondary Vocational-Technical Education Teachers by Vocational Administrators

Programs	Number of Listings
H. Industry	
Vocational teachers exposed to business and industry	6
Role and types of advisory committees	2
Industry up-dates	2
Industrial visits	
School to work transition	
Summer employment in industry	
Up-grading of skills through internship	
On-the-job skills upgrade and enhancements	
Teachers to work in business and industry	
I. Computer	
Computer in the work place	3
Computer assisted programs	
Use of the computer	
J. Youth Clubs	
Youth club support	1
K. Legislation	
Perkins law information	1
School law	
L. Other	
,epting and implementing change	
Adapting to a global society	
Using community resources	
Teaching learning styles	
More peer conducted programs	
How to promote vocational education	
VTE future	
New teacher program	
Follow-up studies	

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